

Predicting Exodontia Competence In Dental Students At Liverpool Dental School.

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Objectives: Analysis of undergraduate dental student performance in exodontia to compare the validity of simple quantitation of experience to measuring 'real world' consistency in performance.

Introduction: A required outcome from the General Dental Council is to be competent to 'extract erupted teeth and roots in the permanent and deciduous dentition¹. This is also required as a competence for graduating European dentists². Traditional assessment methods have established competence by counting numbers, however, data suggest that assessing true competence is likely to be more sophisticated³, requiring data from multiple sources across many contexts be triangulated and assessed. Competency, is on a continuum from novice to expert³ and is required for independent practice. However, it is difficult to define when an undergraduate has achieved this³.

LIFTUPP^{®4} is a technology-supported learning design supporting that has been developed at Liverpool. It is a platform for quality-assured assessment and feedback in education. Using multiple data points for each clinical episode, development can be monitored and data used to inform when levels of independent practice in exodontia have been reached.

*'becoming an expert requires 10 or more years experience.
5 years is only enough to make a good start'⁵.*

Methods: Total anonymised longitudinal data (single cohort; n=64;) was analysed (3rd to 5th year). Consistency of performance was calculated using the formula: number of sessions where triangulated measures of performance fell below expected/total number of sessions.

Results: Average number of teeth extracted per student was 27±6 (range 12-48). Figure 1 illustrates percentile versus numbers of students for (a) tooth movement and (b) total extraction. Based on a numbers criterion, 95% (61/64) would have been 'satisfactory'. If consistency of performance across

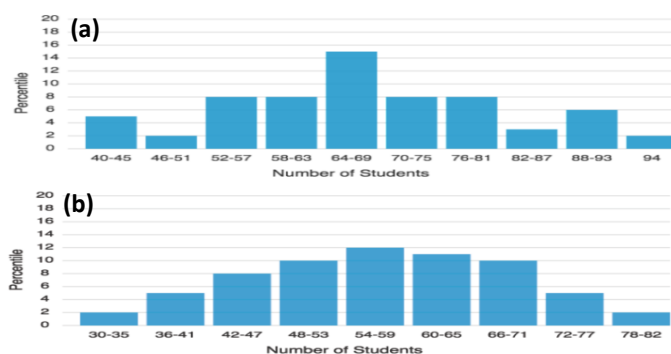


Figure 1: Percentile versus numbers of students for (a)'tooth movement' and (b) 'total extraction'.

time is considered through establishing the ability to undertake all stages of exodontia (across a range of extraction difficulties, combined with associated 'real world skills' (e.g. LA, communication with patient; Fig. 2) then this figure would likely fall by a further 6% (4/65). In one case, a student who had undertaken 30 extractions and was overall 94% consistent in their ability to remove teeth. When all skills were triangulated, their consistency fell to 44%. Overall, the data indicate no correlation between real world skill consistency and simple numbers of extractions, $r = -0.09$.

- **Management of complications**
- **Appropriate Tooth Movement**
- **Socket Management**
- **Professionalism**
- **Understanding of importance of RMH**
- **Interpretation of special investigations**
- **Infection control**

Figure 2: Selection of criteria used for LIFTUPP feedback for each clinical episode

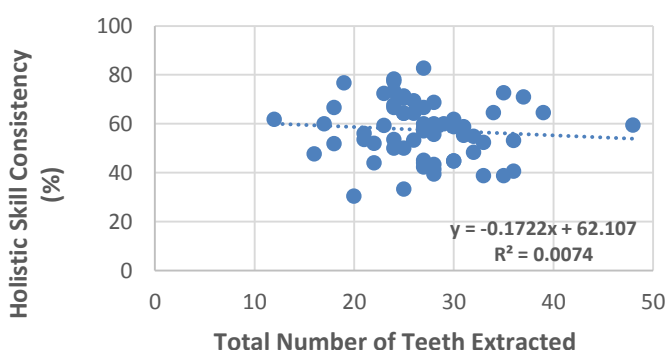


Figure 3: Total longitudinal continuous data (n=65) across 3 years consecutive study

Conclusions: Data suggest that a true measure of competency requires a sophisticated triangulated approach to data collection and integration to reflect the real world skill⁴. The findings presented here support this, and indicate that in order to protect the public within progression decisions, a complete triangulated analysis of data is required, and simply counting of numbers of completed tasks is likely to be highly inadequate.

References:

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